```
=> d hist

     (FILE 'HOME' ENTERED AT 10:39:18 ON 17 AUG 2003)

     FILE 'REGISTRY' ENTERED AT 10:39:33 ON 17 AUG 2003
L1             1 S 9002-89-5

     FILE 'CAPLUS, KOSMET, MEDLINE' ENTERED AT 10:40:13 ON 17 AUG 2003
L2         61558 S L1 OR POLYVINYL (W) ALCOHOL OR POLYVINOL
L3             0 S L2 AND HUMCTANT
L4            98 S L2 AND HUMECTANT
L5             2 S L4 AND CRYSTAL
L6            98 DUPLICATE REMOVE L4 (0 DUPLICATES REMOVED)

=> s l6 and (cosmetic? or topic?)
L7            29 L6 AND (COSMETIC? OR TOPIC?)
```

WEST

Help | Logout | Interrupt

Main Menu | Search Form | Posting Counts | Show S Numbers | Edit S Numbers | Preferences | Cases

Search Results -

Terms	Documents
L20	583

Database:
- US Patents Full-Text Database
- US Pre-Grant Publication Full-Text Database
- JPO Abstracts Database
- EPO Abstracts Database
- Derwent World Patents Index
- IBM Technical Disclosure Bulletins

Search: `L22 and`

Refine Search

Recall Text | Clear

Search History

DATE: Sunday, August 17, 2003 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT; PLUR=YES; OP=AND			
L22	L20	583	L22
DB=JPAB,EPAB,DWPI; PLUR=YES; OP=AND			
L21	L20	0	L21
DB=USPT; PLUR=YES; OP=AND			
L20	l17 and cosmetic$	583	L20
L19	l17 and therap$	364	L19
L18	polyvinyl adj alcohol near humectant	7	L18
L17	l11 and humectant	1852	L17
L16	L12	69	L16
DB=JPAB,EPAB,DWPI; PLUR=YES; OP=AND			
L15	L12	0	L15
DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=AND			
L14	L13 and l11	1	L14
L13	6338855.pn. or 6096295.pn. or6419962.pn. or 6361806.pn.	4	L13
L12	L11 and topical and therapeutical	84	L12
L11	polyvinyl adj alcohol	110446	L11
L10	polyvinyl adj alcohol adj crystal$	46	L10
L9	polyvinyl adj alcohl adj crystal$	0	L9
L8	polyvinol	7	L8
L7	L6 and crospovidone	12	L7
L6	L5 and mannitol	110	L6
L5	amoxycillin	999	L5
DB=USPT; PLUR=YES; OP=AND			
L4	L3 and crospovidone	3	L4
L3	L2 and mannitol	16	L3
L2	L1 and amoxycillin	40	L2
L1	((424/441 |424/439 |424/489)!.CCLS.)	3626	L1

END OF SEARCH HISTORY

Material Safety Data Sheet

Poly(vinyl alcohol)

Valid: 05/2002 - 07/2002

Company:

Aldrich Chemical Co., Inc.
1001 West St. Paul
Milwaukee, WI 53233 USA
Tel: 414-273-3850

Section 1. Chemical Identification

Catalog #: 363065

Name:

Poly(vinyl alcohol), 99+% hydrolyzed,
Average MW 124,000-186,000

Section 2. Composition/Information on Ingredients

CAS #: 9002-89-5
EC No: 209-183-3
Synonyms: ALCOTEX 88/05 * ALCOTEX 88/10 * ALKOTEX * ALVYL * ARACET APV * CIPOVIOL W 72 * COVOL * COVOL 971 * ELVANOL * ELVANOL 50-42 * ELVANOL 52-22 * ELVANOL 70-05 * ELVANOL 71-30 * ELVANOL 90-50 * ELVANOL 522- 22 * ELVANOL 73125G * EP 160 * ETHENOL HOMOPOLYMER (9CI) * GALVATOL 1- 60 * GELVATOL * GELVATOL 1-30 * GELVATOL 1-90 * GELVATOL 3-91 * GELVATOL 20-30 * GELVATOL 2090 * GH 20 * GL 02 * GL 03 * GLO 5 * GM 14 * GOHSENOL * GOHSENOL AH 22 * GOHSENOL GH * GOHSENOL GH 17 * GOHSENOL GH 20 * GOHSENOL GH 23 * GOHSENOL GL 03 * GOHSENOL GL 05 * GOHSENOL GL 08 * GOHSENOL GM 14 * GOHSENOL GM 94 * GOHSENOL GM 14L * GOHSENOL KH 17 * GOHSENOL NH 05 * GOHSENOL NH 17 * GOHSENOL NH 18 * GOHSENOL NH 20 * GOHSENOL NH 26 * GOHSENOL NK 114 * GOHSENOL NL 05 * GOHSENOL NM 14 * IVALON * KURALON VP * KURARE POVAL 1700 * KURARE PVA 205 * KURATE POVAL 120 * LEMOL * LEMOL 5-88 * LEMOL 5-98 * LEMOL 12- 88 * LEMOL 16-98 * LEMOL 24-98 * LEMOL 30-98 * LEMOL 51-98 * LEMOL 60- 98 * LEMOL 75-98 * LEMOL GF-60 * M 13/20 * MOWIOL * MOWIOL N 30-88 * MOWIOL N 50-98 * MOWIOL N 70-98 * NH 18 * NM 11 * NM 14 * POLYDESIS * POLYSIZER 173 * POLYVINOL * POLYVIOL * POLYVIOL M 13/140 * POLYVIOL MO 5/140 * POLYVIOL W 25/140 * POLYVIOL W 40/140 * POVAL 117 * POVAL 120 * POVAL 203 * POVAL 205 * POVAL 217 * POVAL 1700 * POVAL C 17 * PVA 008 * PVS 4 * RESISTOFLEX * RHODOVIOL * RHODOVIOL 4/125 * RHODOVIOL 16/200 * RHODOVIOL 4-125P * RHODOVIOL R 16/20 * SOLVAR * SUMITEX H 10 * VIBATEX S * VINACOL MH * VINALAK * VINAROL * VINAROL DT * VINAROLE * VINAROL ST * VINAVILOL 2-98 * VINNAROL * VINOL * VINOL 125 * VINOL 205 * VINOL 351 * VINOL 523 * VINOL UNISIZE * VINYL ALCOHOL POLYMER * VINYLON FILM 2000 *

Section 3. Hazards Identification

Data N t Available

Section 4. First-aid Measures

If swallowed, wash out mouth with water provided person is conscious. Call a physician.
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
In case of contact, immediately wash skin with soap and copious amounts of water.
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5. Fire Fighting Measures

Extinguishing Media: Water spray. Carbon dioxide, dry chemical powder or appropriate foam.
Special Firefighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Unusual Fire And Explosions Hazards: Emits toxic fumes under fire conditions. Under fire conditions, material may decompose to form flammable and/or explosive mixtures in air.

Section 6. Accidental Release Measures

Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.
Sweep up, place in a bag and hold for waste disposal.
Avoid raising dust.
Ventilate area and wash spill site after material pickup is complete.

Section 7. Handling and Storage

Refer to Section 8.

Section 8. Exposure Controls/Personal Protection

Safety shower and eye bath.
Mechanical exhaust required.
Avoid inhalation.
Avoid contact with eyes, skin and clothing.
Avoid prolonged or repeated exposure.
NIOSH/MSHA-approved respirator.
Compatible chemical-resistant gloves.
Chemical safety goggles.
Keep tightly closed.
Store in a cool dry place.
Wash thoroughly after handling.

Section 9. Physical and Chemical Properties

Appearance and Odor: Off white crystalline powder

Section 10. Stability and Reactivity

Stability: Stable.
Incompatibilities: Strong oxidizing agents
Hazard us Combustion or Decomposition Products: Carbon monoxide, carbon dioxide
Hazardous polymerization: Will not occur.

Section 11. Toxicological Information

Acute effects:

May cause skin irritation.
May be harmful if absorbed through the skin.
May cause eye irritation.
May be harmful if inhaled.
Material may be irritating to mucous membranes and upper respiratory tract.
May be harmful if swallowed.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Chronic effects:

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP or EPA classification.

RTECS #:

TR8100000 Polyvinyl Alcohol

Toxicity Data:

ORL-RAT LD50: >20 gm/kg GISAAA 51(10), 75, 1986
ORL-MUS LD50: 14700 mg/kg GISAAA 51(10), 75, 1986

Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Section 12. Ecological Information

Data not yet available.

Section 13. Disposal Considerations

Contact a licensed professional waste disposal service to dispose of this material.
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state and local environmental regulations.

Section 14. Transport Information

Contact Aldrich Chemical Company for transportation information.

Section 15. Regulatory Information

Reviews, Standards, and Regulations:
OEL=MAK IARC Cancer Review: Human no adequate data IMEMDT 19,341,1979
IARC Cancer Review: Animal inadequate evidence IMEMDT 19,341,1979
IARC Cancer Review: Group 3 IMSUDL 7,56,1987
NOHS 1974: HZD 81944; NIS 159; TNF 17615; NOS 98; TNE 124708
NOES 1983: HZD X8571; NIS 181; TNF 25435; NOS 133; TNE 500947; TFE 183064
EPA TSCA Section 8(b) Chemical Inventory
EPA TSCA Test Submission (TSCATS) Data Base, January 2001

Section 16. Other Information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma, Aldrich, Fluka shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

POLYVINYL ALCOHOL

MSDS Number: P5282 --- *Effective Date: 11/02/01*

1. Product Identification

Synonyms: Polyvinyl alcohol; PVA; Polyvinol; ethenol homopolymer
CAS No.: 9002-89-5
Molecular Weight: Not applicable to mixtures.
Chemical Formula: [-CH2CHOH-]n
U227, U228, U229, U232

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Methyl Alcohol	67-56-1	< 1%	No
Polyvinyl Alcohol	9002-89-5	> 95%	Yes

3. Hazards Identification

Emergency Overview

CAUTION! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR.
NUISANCE DUST.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 0 - None
Flammability Rating: 2 - Moderate

Reactivity Rating: 0 - None
Contact Rating: 0 - None
Lab Protective Equip: GOGGLES; LAB COAT; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
Dust may be formed under certain conditions of use. Treat as a nuisance dust. When heated above 200C, fumes irritating the eyes nose, throat will be evolved. Symptoms may include tears in the eyes with itching, redness, burning pain in throat and nose.
Ingestion:
Not expected to be a health hazard via ingestion.
Skin Contact:
Not expected to be a health hazard from skin exposure.
Eye Contact:
Mechanical irritation only.
Chronic Exposure:
No human data. Animal studies showed a drop in hemoglobin and erythrocyte(red blood cell) number with eventual complete coagulation inhibition. There is the possibility of carcinogenicity as seen in some animal studies.
Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

Inhalation:
Remove to fresh air. Get medical attention for any breathing difficulty.
Ingestion:
Not expected to require first aid measures.
Skin Contact:
Wash exposed area with soap and water. Get medical advice if irritation develops.
Eye Contact:
Wash thoroughly with running water. Get medical advice if irritation develops.

5. Fire Fighting Measures

Fire:
Flash point: 79C (174F) OC
As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Minimum dust cloud ignition temperature: 450C (842F).
Explosion:
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Maximum explosion pressure: 78 lb./sq. in.
Fire Extinguishing Media:
Water spray, dry chemical, alcohol foam, or carbon dioxide.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from incompatibilities. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in any process capable of generating dust and/or static electricity. Empty only into inert or non-flammable atmosphere. Emptying contents into a non-inert atmosphere where flammable vapors may be present could cause a flash fire or explosion due to electrostatic discharge.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
- OSHA Permissible Exposure Limit (PEL):
15 mg/m3 total dust, 5 mg/m3 respirable fraction for nuisance dusts.
- ACGIH Threshold Limit Value (TLV):
10 mg/m3 total dust containing no asbestos and < 1% crystalline silica for Particulates Not Otherwise Classified (PNOC).

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear protective gloves and clean body-covering clothing.
Eye Protection:
Use chemical safety goggles.

9. Physical and Chemical Properties

Appearance:
White free-flowing granules.
Odor:
Mild odor.
Solubility:
Moderately soluble.
Specific Gravity:
1.19 - 1.31
pH:
Aqueous solution is neutral or slightly acid.
% Volatiles by volume @ 21C (70F):
0
Boiling Point:
No information found.
Melting Point:
ca. 200C (ca. 392F)
Vapor Density (Air=1):
No information found.
Vapor Pressure (mm Hg):
No information found.
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Complete combustion will emit carbon dioxide and water when heated to decomposition. Incomplete combustion gives in addition carbon monoxide and oxidation products, including organic acids, aldehydes and alcohol.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Strong oxidizers.
Conditions to Avoid:
Heat, flame, ignition sources, dusting and incompatibles.

11. Toxicological Information

Oral rat LD50: > 20 gm/kg. Investigated as a tumorigen.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Methyl Alcohol (67-56-1)	No	No	None
Polyvinyl Alcohol (9002-89-5)	No	No	3

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\----------

Ingredient	TSCA	EC	Japan	Australia
Methyl Alcohol (67-56-1)	Yes	Yes	Yes	Yes
Polyvinyl Alcohol (9002-89-5)	Yes	No	Yes	Yes

--------\Chemical Inventory Status - Part 2\----------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Methyl Alcohol (67-56-1)	Yes	Yes	No	Yes
Polyvinyl Alcohol (9002-89-5)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Methyl Alcohol (67-56-1)	No	No	Yes	No
Polyvinyl Alcohol (9002-89-5)	No	No	No	No

--------\Federal, State & International Regulations - Part 2\----------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Methyl Alcohol (67-56-1)	5000	U154	No
Polyvinyl Alcohol (9002-89-5)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: No Chronic: No Fire: Yes Pressure: No
Reactivity: No (Mixture / Solid)

Australian Hazchem Code: No information found.
Poison Schedule: No information found.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

16. Other Information

NFPA Ratings: Health: **0** Flammability: **2** Reactivity: **0**
Label Hazard Warning:
CAUTION! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR. NUISANCE DUST.
Label Precautions:
Store in a tightly closed container.
Avoid breathing dust.
Avoid dust cloud in presence of an ignition source.
Maintain adequate ventilation.
Label First Aid:
Not applicable.
Product Use:
Laboratory Reagent.
Revision Information:
MSDS Section(s) changed since last revision of document include: 8.
Disclaimer:
****

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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)

- Welcome
- Erkol
- Acetex
- PVA
  - General
  - Continuous
  - Discontinuous
  - Special 
  - Catalogue
- PVAc
- Solvents (METAC)
- AcOH
- Environ.,Safety & Health
- Addresses
- Contact us
- News
- Links
  - Tarragona
  - Guardo
  - FEIQUE
  - CEFIC
  - Responsible Care

POLYVINYL ALCOHOL

MSDS Number: P5282 --- *Effective Date: 12/08/96*

1. Product Identification

Synonyms: Polyvinyl alcohol; PVA; Polyvinol; ethenol homopolymer
CAS No.: 9002-89-5
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Product Codes: U227, U228, U229, U232

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
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Polyvinyl Alcohol	9002-89-5	> 95%	Yes

3. Hazards Identification

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J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 0 - None
Flammability Rating: 2 - Moderate

National Toxicology Program

Good Science for Good Decisio

SEARCH
NTP test results, status and reports

What's New?

- CERHR Announces **Availability of Expert Panel Reports on Developmental and Reproductive Toxicity of Ethylene Glycol and Propylene Glycol and Request for Public Comments**

- **Latest Update from the NTP Liaison & Scientific Review Office** (in pdf format -- **get free reader from Adobe**)

- CERHR Announces **Future Evaluations of Fluoxetine Hydrochloride (Prozac®; Sarafen™, and Acrylamide, Requests Public Comments, and Solicits Expert Panel Nominations**

- **NTP Board to review Draft Technical Reports May 22** (Federal Register Notice; meeting agenda, draft reports)

- NTP Announces the Availability of *The NTP Annual Plan for FY 2002* (**Federal Register Notice**) -- **Annual Plan** (in pdf format -- **get free reader from Adobe**)

- **more...**

- **NTP Study Information**
- **Report on Carcinogens (RoC)**
- **NTP Centers**
- **Grants**
- **How to Nominate Substances**
- **How Regulatory Agencies use NTP Data**
- **Chemical Health & Safety Information**

The National Toxicology Program (NTP), within the U.S. Department of Health and Human Services, is an interagency program headquartered at the National Institutes of Health's **National Institute of Environmental Health Sciences** (NIEHS) located in Research Triangle Park, NC.

Please send queries, comments, and suggestions to: **ntpwm@niehs.nih.gov**

NTP CHEMICAL REPOSITORY
POLY(VINYL ALCOHOL)

-IDENTIFIERS
==========

*CATALOG ID NUMBER: 002342

*CAS NUMBER: 9002-89-5

*BASE CHEMICAL NAME: POLYVINYLALCOHOL

*PRIMARY NAME: POLY(VINYL ALCOHOL)

*CHEMICAL FORMULA: (C2H4O)n

*STRUCTURAL FORMULA: (-CH2CH(OH)-)n

*WLN: Not available

*SYNONYMS:
PVA
POLYVINYL ALCOHOL
VINYL ALCOHOL POLYMER
ETHENOL, HOMOPOLYMER
LIQUIFILM
ALCOTEX 88/05
ALCOTEX 88/10
ALKOTEX
ALVYL
ARACET APV
CIPOVIOL W 72
COVOL
COVOL 971
ELVANOL
ELVANOL 50-42
ELVANOL 52-22
ELVANOL 70-05
ELVANOL 71-30
ELVANOL 90-50
ELVANOL 522-22
ELVANOL 73125G
EP 160
GALVATOL 1-60
GELVATOL
GELVATOL 1-30
GELVATOL 1-60
GELVATOL 1-90
GELVATOL 3-91
GELVATOL 20-30
GELVATOL 2090
GH 20
GL 02
GL 03
GLO 5
GM 14
GOHSENOL
GOHSENOL AH 22
GOHSENOL GH

GOHSENOL GH 17
GOHSENOL GH 20
GOHSENOL GH 23
GOHSENOL GL 02
GOHSENOL GL 03
GOHSENOL GL 05
GOHSENOL GL 08
GOHSENOL GM 14
GOHSENOL GM 94
GOHSENOL KH 17
GOHSENOL NH 05
GOHSENOL NH 17
GOHSENOL NH 18
GOHSENOL NH 20
GOHSENOL NH 26
GOHSENOL NK 114
GOHSENOL NL 05
GOHSENOL NM 14
GOHSENOL NM 114
IVALON
KURALON VP
KURARE POVAL 1700
KURARE PVA 205
KURATE POVAL 120
LEMOL
LEMOL 5-88
LEMOL 5-98
LEMOL 12-88
LEMOL 16-98
LEMOL 24-98
LEMOL 30-98
LEMOL 51-98
LEMOL 60-98
LEMOL 75-98
LEMOL GF-60
M 13/20
MOWIOL
MOWIOL N 30-88
MOWIOL N 50-98
MOWIOL N 70-98
NH 18
NM 11
NM 14
POLYDESIS
POLYSIZER 173
POLYVINOL
POLYVIOL
POLYVIOL M 13/140
POLYVIOL MO 5/140
POLYVIOL W 25/140
POLYVIOL W 40/140
POVAL 117
POVAL 120
POVAL 203
POVAL 205
POVAL 217
POVAL 1700
POVAL C 17
PVA 008
PVS 4

RESISTOFLEX
RHODOVIOL
RHODOVIOL 4/125
RHODOVIOL 16/200
RHODOVIOL 4-125P
RHODOVIOL R 16/20
SOLVAR
SUMITEX H 10
VIBATEX S
VINACOL MH
VINALAK
VINAROL
VINAROL DT
VINAROLE
VINAROL ST
VINAVILOL 2-98
VINNAROL
VINOL
VINOL 125
VINOL 205
VINOL 351
VINOL 523
VINOL UNISIZE
VINYLON FILM 2000
VINYL ALCOHOL, POLYMER
AKWA TEARS
MOVIOL
SNO TEARS
PVOH
PVAL
PVA1
VINYLON

-PHYSICAL CHEMICAL DATA
 ======================

*PHYSICAL DESCRIPTION: LITERATURE: White to cream-colored granules or powder
REPOSITORY: Not available

*MOLECULAR WEIGHT: 25000-300000

*SPECIFIC GRAVITY: 1.329 [058]

*DENSITY: 1.25-1.35 g/mL (depending on moisture content) [430]

*MP (DEG C): 228 C (decomposes) [395]

*BP (DEG C): ~340 C @ 760 mm Hg [058]

*SOLUBILITIES:
WATER : Soluble [058,062,151,451]

DMSO : Soluble [430]

95% ETHANOL : Not available

METHANOL : Not available

ACETONE : Not available

TOLUENE : Not available

OTHER SOLVENTS:
Petroleum solvents: Insoluble [033,395]
Many organic solvents: Insoluble [430]
Formamide: Soluble [430]

*VOLATILITY:
Vapor pressure: Negligible [058]
Vapor density : Not available

*FLAMMABILITY(FLASH POINT):
This chemical has a flash point of 79 C (175 F). It is combustible. Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. A water spray may also be used [058,269]. The dusts of this chemical are a slight explosion hazard when exposed to flame [043].

*UEL: Not available LEL: Not available

*REACTIVITY:
This chemical can react with oxidizers [043,058,269]. It is attacked by acids and alkalies [062,395]. It is plasticized in moisture and water-soluble polyhydric alcohols, amides and calcium chloride. Boiling with hydrogen peroxide lowers its molecular weight and introduces acid groups [430]. This chemical undergoes esterification and etherification [395].

*STABILITY:
This chemical is sensitive to water and moist air [058]. It degrades under ultraviolet radiation. It also degrades slowly at temperatures greater than 100 C, with rapid degradation at temperatures greater than 200 C [395]. Aqueous solutions are colloidal [033].

*OTHER PHYSICAL DATA:
Melting point also reported as 212-267 C (syndiotactic) [430]
Pure aqueous solutions are neutral or faintly acid and subject to mold growth [033].
pH (4% aqueous solution): 5-8 [295]
Strongly hydrophilic [295]
Water solubility increases as molecular weight decreases [062]
Strength, elongation, tear resistance and flexibility improve with increasing molecular weight [062]
Tensile strength up to 22000 psi [062]
High impermeability to gases [062]
Unaffected by oils, greases and petroleum hydrocarbons [062]
Forms films by evaporation from water solution [062]
Glass transition temperature: 85 C [430]
Evaporation rate (butyl acetate = 1): <1 [058]
Odorless [058,151,295]
Refractive index: 1.49-1.53 (depending on moisture content) [062,395,430]

-TOXICITY
========

*NIOSH REGISTRY NUMBER: TR8100000

*TOXICITY: **(abbreviations)**

typ. dose	mode	specie	amount	units	other

LD50	orl	mus	14700	mg/kg

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION:
THR: An experimental carcinogen and tumorigen. It may be a human carcinogen.

*CARCINOGENICITY:
Tumorigenic Data:
TDLo: scu-rat 2500 mg/kg
TDLo: imp-rat 10 gm/kg
TD : imp-rat 3768 mg/kg
Review: IARC Cancer Review: Animal Limited Evidence
IARC Cancer Review: Human Inadequate Evidence
IARC: Not classifiable as a human carcinogen (Group 3) [015,395,610]
Status: NTP Carcinogenesis Studies; selected, January 1990

*MUTATION DATA: Not available

*TERATOGENICITY: Not available

*STANDARDS, REGULATIONS & RECOMMENDATIONS:
OSHA: None
ACGIH: None
NIOSH Criteria Document: None
NFPA Hazard Rating: Health (H): 0
Flammability (F): 2
Reactivity (R): 0
H0: Materials which on exposure under fire conditions would offer no hazard beyond that of ordinary combustible material (see NFPA for details).
F2: Materials which must be moderately heated before ignition will occur (see NFPA for details).
R0: Materials which are normally stable even under fire exposure conditions and which are not reactive with water (see NFPA for details).

*OTHER TOXICITY DATA:
Review: Toxicology Review
Status: EPA TSCA Chemical Inventory, 1989
Single dose toxicity is presumably low [151]

-OTHER DATA (Regulatory)
==========

*PROPER SHIPPING NAME (IATA): Not restricted

*UN/ID NUMBER:

*HAZARD CLASS: SUBSIDIARY RISK: PACKING GROUP:

*LABELS REQUIRED:

*PACKAGING: PASSENGER: PKG. INSTR.: MAXIMUM QUANTITY:
CARGO : PKG. INSTR.: MAXIMUM QUANTITY:

*SPECIAL PROVISIONS:

*USES:
This compound is used in the plastics industry in molding compounds,

surface coatings, films resistant to gasoline, textile sizes and finishing compositions. It can be compounded to yield elastomers to be used in the manufacture of artificial sponges, fuel hoses, etc.. It is also used in printing inks for plastics and glass, in pharmaceutical finishing, in cosmetics, in water-soluble film and in sheeting. It is a pharmaceutic aid (viscosity increasing agent) and ophthalmic lubricant. It has been used in the preparation of jellies which dry rapidly when applied to the skin to form a soluble plastic film. Other uses include as a plastic sponge implant (in relatively insoluble form), in laminating adhesives, in ceramics, leather, cloth, nonwoven fabrics and paper, in paper coatings, in greaseproofing paper, as an emulsifying agent, as a thickener and stabilizer, in photosensitive films, in cements and mortars and as an intermediate for other polyvinyls. It was once proposed as a substitute for blood plasma.

*COMMENTS:
This compound is a polymer prepared from polyvinyl acetates by the replacement of the acetate groups with hydroxyl groups. Vinyl alcohol monomer is incapable of existence [033]. The properties of this compound depend on the degree of polymerization and the percentage of alcoholysis, both of which are controllable in processing [062].

-HANDLING PROCEDURES
==========

*ACUTE/CHRONIC HAZARDS:
This compound may be harmful by ingestion and inhalation. It may cause irritation [269]. When heated to decomposition it emits acrid smoke, irritating fumes and toxic fumes of carbon monoxide and carbon dioxide [043, 058,269].

*MINIMUM PROTECTIVE CLOTHING: Not available

*RECOMMENDED GLOVE MATERIALS:
GlovES+ Expert System Glove Types For The Neat (Undiluted) Chemical:
This chemical has not been tested for permeation by Radian Corporation; however, the GlovES+ expert system was used to extrapolate permeation test information from compounds in the same chemical class. The GlovES+ system uses permeation data from literature sources; therefore, extra safety margins should be used with the estimated protection time(s). If this chemical makes direct contact with your glove, or if a tear, puncture or hole develops, replace them at once.
The GlovES+ expert system is a tool that can help people better manage protection from chemicals, however this tool cannot replace sound judgment nor make technical decisions. Our GlovES+ expert system is designed to offer initial advice and assistance in glove selection while the final glove selection should be made by knowledgeable individuals based on the specific circumstances involved.

Glove Type	Model Number	Thickness mm	Estimated Protection Time min

*RECOMMENDED RESPIRATOR:
Where the neat test chemical is stored, weighed and diluted, wear an approved half face respirator equipped with an organic vapor/acid gas cartridge (specific for organic vapors, HCl, acid gas and SO2) with a dust/mist filter.

*OTHER: Not available

*STORAGE PRECAUTIONS:
You should store this chemical under ambient temperatures, and protect it from moisture and light. If possible, it would be prudent to store this compound under inert atmosphere.

*SPILLS AND LEAKAGE:
If you spill this chemical, you should dampen the solid spill material with water, then transfer the dampened material to a suitable container. Use absorbent paper dampened with water to pick up any remaining material. Seal your contaminated clothing and the absorbent paper in a vapor-tight plastic bag for eventual disposal. Wash all contaminated surfaces with a soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

*DISPOSAL AND WASTE TREATMENT: Not available

-EMERGENCY PROCEDURES
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*SKIN CONTACT:
IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water.
If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

*INHALATION:
IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital.
Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Respirator Recommendation.

*EYE CONTACT:
First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center.
Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician.
IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

*INGESTION:
If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician.
If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital.

*SYMPTOMS:
Inhalation of the dust of this chemical may cause irritation of the nose and throat and cause coughing and chest discomfort if heated

above 199 C. The dusts may also irritate the eyes [058]. Implantation of this chemical into the breast has been associated with fibrosis [395].

Symptoms of exposure in rats include anemia, infiltration of various organs and tissues, hepatosplenomegaly, histologic changes, thymus involution, hypertension, widespread vascular lesions, hypertrophy of the heart and kidney, extensive renal pathology, increased thyroid weight and cases of edema, ascites, death and eclamptogenic toxemia [151]. Exposure in mice has caused altered sleep time, somnolence and muscle weakness [015].

-SOURCES
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